ON THE LOOKOUT: Stephanie Plön, a research fellow at Nelson Mandela Metropolitan University's Coastal and Marine Research Institute, takes photographs of the dorsal fins of dolphins in Algoa Bay to identify and track them.

PICTURE: LEONETTE BOWER

Whales in Algoa Bay come under microscope

University in Port Elizabeth running several studies on marine mammal health, writes **NICKY WILLEMSE**

GROUNDBREAKING research into how whales communicate with their calves is being undertaken in Algoa Bay, Port Elizabeth. It's part of a larger study which is monitoring the potential impact of shipping noise on whales in the bay.

The study, run by Nelson Mandela Metropolitan University (NMMU) and funded by Transnet National Ports Authority, is one of several cutting edge studies on marine mammal health being carried out by NMMU.

Other projects include monitoring dolphin populations along the Wild Coast, a first for this area, and also investigating the potential cause of a dolphin parasite found in recent years.

Leading these projects is Dr Stephanie Plön, a research fellow with NMMU's Coastal and Marine Research (CMR) Institute, who has been working in Eastern Cape waters for the past two decades.

"We need to understand our local whale and dolphin populations better, along with the various threats they face… By monitoring the health of animals at the top of the food chain (like dolphins and whales), we also get a good idea about the health of the marine environment."

The whale project is a four-year study, for which Transnet has provided R800 000 in funding. Around the time of the opening of the new industrial port of Ngqura at Coega in 2009, unexpectedly high numbers of whales were being sighted in Algoa Bay.

"A study carried out from 2008 to 2011 found an unexpected number of baleen whales, including mother-and-calf pairs," said Plön. "Even if shipping noise is found not to be a problem, we need to learn more about them as there is the risk of collisions between ships and whales – so we are also assessing the interaction between whales and ships.

"We don't have any intentions to stop development, but potential problems have to be identified and, if necessary, mitigated. If there is too much noise, there are ways to mitigate it. And if there is a risk of collisions, there are ways to mitigate that too."

Possible noise solutions included quieter propellers on ships, or "bubble curtains" to break up construction noise.

The quieter St Francis Bay is being used as a control for comparison.

Plön said whales had been recorded in larger numbers in Algoa Bay only from about 2000 onwards. Between June and December every year, they ventured into the warmer Indian Ocean waters to calve before heading back to Antarctica.

'We are also monitoring how shipping sound impacts on their communication'

"We are busy studying how they communicate with their young. Until now, there has been very little research on this globally.. We want to see whether they vocalise to communicate, or whether they communicate by other means (like physical communication). We are also monitoring how shipping sound impacts on their communication."

She said a second project, a three-year boat-based study run in collaboration with Rhodes University and the Eastern Cape Parks and Tourism Agency (ECPTA), with funding from PetroSA, was looking into determining dolphin population structure along the Wild Coast.

"I'm excited about this. The Wild Coast is unexplored and hard to study – we know about dolphins in KwaZulu-Natal and have some info about dolphins in the south-eastern Cape. Now we are trying to fill the gap and study dolphins in between these two areas. Dolphins can range up to 500km. We want to see if the animals in Algoa Bay are the same ones as in KwaZulu-Natal."

Doctoral students will track the dolphins in by photographing their unique dorsal fins and performing small biopsies on skin and blubber – which will give them an idea of the dolphin's genetics and their diet (through stable isotope and fatty acid analysis). It will be the first boat-based study of the Wild Coast dolphins. Other boat studies in this area have focused on the sardine run."

Plön said a third study involved using 40 years of data – available through the extensive marine mammal collection at Bayworld in Port Elizabeth, the third largest such collection in the world. Bayworld has been involved in dissecting dolphins accidentally caught in the KwaZulu-Natal shark nets since the late 1970s, and these have given scientists clear indication of the health of the dolphin populations, and the health of the marine environment they inhabit. Bayworld also collects samples and information from dolphins that have died after being stranded – usually these animals are sick already.

"Over the last six years, I have seen changes in the dolphins accidentally caught, and saw the same changes in three different species and in all age groups. Initially, I thought it was a virus, but, working with colleagues from the National Zoological Gardens, Pretoria and the Veterinary University of Hannover, Germany, the changes appear to be parasite-related.

"A masters student is now looking at parasites in dolphins and whales in Eastern Cape and KwaZulu-Natal waters over the last 40 years."